INCH-POUND
MIL-C-17/201
9 December 1993

MILITARY SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE, TWINAXIAL, SINGLE SHIELD, DATA BUS, 77 OHMS

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-C-17.

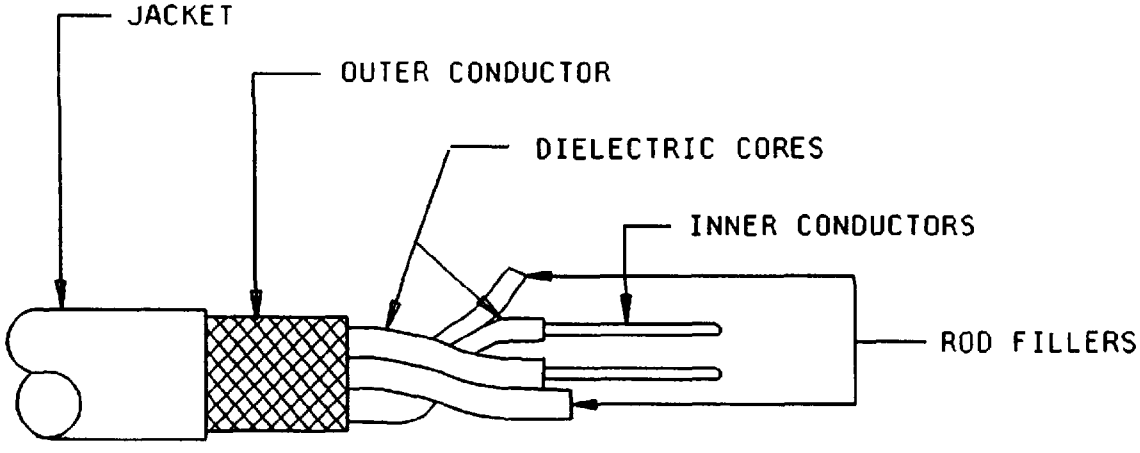

FIGURE 1. Configuration for M17/201-00001 through M17/201-00003.

TABLE I. Description.

Components	Construction		
	M17/201-00001	M17/201 00002	M17/201-00003
Inner conductors 1/	AWG 24. 19 strands AWG 36 silver-coated, high strength copper alloy 2/	AWG 22. 19 strands AWG 34 tin-coated copper. 3/	AWG 24. 19 strands AWG 36 silver-coated, high strength copper alloy. 2/
Dielectrics	Radiation-crosslinked modified ETFE, one light blue, one white. Permitivity: 2.7 nominal O.D.: .052 ±.002 inch each. 4/	Radiation-crosslinked modified ETFE, one light blue, one white. Permitivity: 2.7 nominal O.D.: .064 ±.003 inch each 4/	Radiation-crosslinked modified ETFE, one light blue, one white. Permitivity: 2.7 nominal O.D.: .048 ±.002 inch each 4/
Fillers	None	None	Rod fillers, radiation-crosslinked ETFE.
Braid	AWG 24 overall. AWG 38 tin-coated copper. Coverage: 90 % minimum. Braid angle range: 18°-40°. O.D.: .127 inch maximum.	AWG 22 overall. AWG 36 tin-coated copper. Coverage: 90 % minimum. Braid angle range: 18°-40°. O.D.: .153 inch maximum.	AWG 24 overall. AWG 38 tin-coated copper, optimized. Coverage: 90 % minimum. O.D.: .120 inch maximum.
Jacket	Radiation-crosslinked modified ETFE, white. O.D.: .137 ±.007 inch.	Radiation-crosslinked modified ETFE, white. O.D.: .165 ±.008 inch.	Radiation-crosslinked modified ETFE, white. O.D.: .130 ±.007 inch.

1/ Lay length shall be 1.00 ±.25 inch.

2/ High strength copper alloy in accordance with MIL-W-22759/35.

3/ Tin-coated, high strength copper alloy in accordance with MIL-W-22759/34.

4/ Radiation-crosslinked modified ETFE copolymer in accordance with MIL-W-22759/35.

ENGINEERING INFORMATION:

Continuous working voltage: 600 V rms maximum at sea level.

Operating frequency: 10 MHz maximum.

Velocity of propagation: 61% nominal.

Operating temperature range: -65°C to +150°C.

Inner conductor properties:

DC resistance (maximum at 20°C):

M17/201-00001 and M17/201-00003: 28.4 ohms/100 feet.
M17/201-00002: 16.2 ohms/100 feet.

Elongation:

M17/201-00001 and M17/201-00003: 6% minimum.
M17/201-00002: 10% minimum.

Tensile strength:

M17/201-00001 and M17/201-00003: 22.4 pounds minimum.
M17/201-00002: Not applicable.

Jacket properties:

Elongation: 50% minimum.

Tensile strength: 5k lbf/inch^2, minimum.

Engineering note: Cables shall be suitable for use in MIL-STD-1553 data bus systems for use as main bus or stub cable.

REQUIREMENTS:

Dimensions, configuration, and description: See figure 1 and table I.

Environmental and mechanical:

Visual and mechanical examination:

Out-of-roundness: Applicable to M17/201-00003 only.

Eccentricity: 10% maximum.

Adhesion of conductors: Dielectrics shall be free stripping, using conventional stripping tools, without breakage of conductor strands and without bunching of the dielectric.

Electrical and mechanical:

Operational:

Continuity: Applicable.

Spark test: 1,000 V rms minimum.

Voltage withstanding: 1,000 V rms, +10%, -0%.

Insulation resistance: 5,000 megohms minimum per 1,000 feet.

Corona extinction voltage: Not applicable.

Characteristic impedance: 77 ±5 ohms at 1 MHz.

Surface transfer impedance: In accordance with MIL-C-85485; 100 milliohms/meter maximum at 1 MHz. Applicable to M17/201-00003 only.

RF transmission loss (attenuation):

M17/201-00001 and M17/201-00003: 1.4 dB/100 feet maximum at 1 MHz.
M17/201-00002: 1.0 dB/100 feet maximum at 1 MHz.

Standing wave ratio (return loss): Not applicable.

Capacitance: 30 pF/foot maximum at 1 MHz.

Capacitance stability: Not applicable.

Capacitance unbalance: 5% maximum.

Transmission unbalance: Not applicable.

Mechanically induced noise voltage: Not applicable.

Time delay: Not applicable.

Aging stability: Not applicable.

Stress-crack resistance: Not applicable.

Outer conductor integrity: Not applicable.

Cold bend: -65°C (6-inch mandrel). Jacket shall pass spark test.

Dimensional stability: Not applicable.

Contamination: Not applicable.

Bendability: Not applicable.

Flammability: Cable shall be tested in accordance with the flammability procedure of MIL-W-22759/35 and shall meet the requirements specified therein.

Flame propagation: Not applicable.

Acid gas generation: Not applicable.

Halogen: Not applicable.

Fluid immersion: Cable shall be tested in accordance with MIL-W-22759/35 using a 6-inch diameter mandrel. There shall be no cracking of the jackets or evidence of breakdown. The increase in diameter shall be 5 percent maximum.

Smoke index: Not applicable.

Toxicity index: Not applicable.

Durometer hardness: Not applicable.

Weatnering: Not applicable.

Abrasion resistance: Not applicable.

Tear strength: Not applicable.

Heat distortion: Not applicable.

Physical properties of insulation: Shall be in accordance with MIL-W-22759/35 for PIN's M17/201-00001 and M17/201-00003. MIL-W-22759/34 shall apply to PIN M17/201-00002.

Hot oil immersion: Not applicable.

Accelerated aging: Shall be in accordance with MIL-W-22759/35 (.5-inch mandrel, .375-pound load) for PIN's M17/201-00001 and M17/201-00003. MIL-W-22759/34 (.5-inch mandrel, .5-pound load) shall apply to PIN M17/201-00002.

Impulse dielectric: Shall be in accordance with MIL-W-22759/35 for PIN's M17/201-00001 and M17/201-00003. MIL-W-22759/34 shall apply to PIN M17/201-00002.

Marking: M17/201-(dash number from table I).

Weight:

M17/201-00001, 14.2 lbs/1,000 feet maximum.
M17/201-00002, 21.9 lbs/1,000 feet maximum.
M17/201-00003, 15.9 lbs/1,000 feet maximum.

Workmanship: Applicable.

Supersession: Thsi specification shall supersede Air Force drawing 8421526 when a QPL source becomes available.

CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - EC
Air Force - 85

Review activities:
Army - AR, AT, MI, ME
Navy - AS, MC, OS, SH, TD
Air Force - 17, 19, 99

Preparing activity:
Air Force - 85

Agent:
DLA - ES

(Project 6145-2007-01)